

IN THE CLAIMS:

Page 27, before Claim 1, delete:

CLAIMS

Page 27, before Claim 1, insert:

WHAT IS CLAIMED IS:

Please cancel claims 1-20 without prejudice or disclaimer, and substitute new Claims 21-40 therefor as follows:

1-20 (Canceled)

21. (New) An optical fiber preform elongation process, comprising:
- heating the preform so as to soften one region thereof;
 - elongating the preform by submitting the preform to a traction;
 - determining, during the step of elongating, the preform diameter in at least one measuring point along the preform;
 - controlling the step of elongating on the basis of the determined diameter;
 - measuring, during the step of elongating, at least a geometrical parameter of the preform; and
 - controlling, during the step of elongating, the position of said diameter measuring point according to the measured geometrical parameter.
22. (New) The process according to claim 21, wherein measuring at least a geometrical parameter of the preform comprises determining the profile of at least a portion of the softened region.
23. (New) The process according to claim 22, wherein measuring at least a geometrical parameter of the preform comprises detecting, from said determined profile,

at least one among a softened region starting point and a softened region final point, and wherein controlling the position of said measuring point comprises choosing a diameter measuring point located at a predetermined distance from one among the softened region starting point and the softened region final point.

24. (New) The process according to claim 23, wherein measuring at least a geometrical parameter of the preform further comprises detecting, from said determined profile, the length of the softened region, and wherein said predetermined distance is a predetermined percentage of said length.

25. (New) The process according to claim 22, wherein determining the profile comprises detecting a predetermined number of points along the profile of the preform and interpolating said points.

26. (New) The process according to claim 22, wherein determining the profile comprises capturing a digital image of the at least a portion of the softened region.

27. (New) The process according to claim 21, wherein controlling the step of elongating comprises comparing the determined diameter with a target diameter.

28. (New) The process according to claim 21, wherein heating the preform comprises feeding the preform to a furnace at a first speed, and submitting the preform to a traction which comprises pulling the preform out of the furnace at a second speed; and wherein controlling the step of elongating comprises controlling at least one among the first speed and the second speed.

29. (New) The process according to claim 21, wherein heating the preform comprises exposing the preform to a heater movable along a preform axis at a first speed, and applying a traction which comprises pulling at least one end of the preform

at a second speed, and wherein controlling the step of elongating comprises controlling at least one among the first speed and the second speed.

30. (New) An optical fiber preform elongation process, comprising:
heating the preform so as to soften one region thereof;
elongating the preform by submitting the preform to a traction;
determining at least a geometrical parameter of the preform which
comprises detecting the profile of at least a portion of the softened region; and
controlling the step of elongating on the basis of the detected geometrical
parameter.

31. (New) The process according to claim 30, wherein detecting the profile
comprises detecting a predetermined number of points along the profile of the preform
and interpolating said points.

32. (New) the process according to claim 30, wherein detecting the profile
comprises capturing a digital image of the at least a portion of the softened region.

33. (New) The process according to claim 30, wherein determining at least a
geometrical parameter further comprises determining the preform diameter in a
measuring point of the softened region and wherein controlling the step of elongating
comprises comparing the determined diameter with a target diameter.

34. (New) The process according to claim 30, wherein determining the
preform diameter comprises controlling the position of the measuring point according to
said detected profile.

35. (New) The process according to claim 33, further comprising controlling
the target diameter according to said detected profile.

36. (New) The process according to claim 33, wherein the preform diameter is determined from said detected profile.

37. (New) The process according to claim 34, wherein determining at least a geometrical parameter comprises determining, from said detected profile, at least one among a softened region starting point and a softened region final point, and wherein controlling the position of the measuring point comprises choosing a measuring point located at a predetermined distance from one among the softened region starting point and the softened region final point.

38. (New) The process according to claim 37, wherein measuring at least a geometrical parameter of the preform further comprises detecting, from said determined profile, the length of the softened region, and wherein said predetermined distance is a predetermined percentage of said length.

39. (New) A process for manufacturing an optical fiber, comprising producing a glass preform and drawing the glass preform into an optical fiber, wherein producing a glass preform comprises the steps of:

heating an intermediate preform so as to soften one region thereof;

elongating the intermediate preform by submitting the intermediate preform to a traction;

detecting, during the step of elongating, the preform diameter in at least one measuring point along the intermediate preform;

controlling the step of elongating on the basis of the detected diameter;

measuring, during the step of elongating, at least a geometrical parameter of the preform; and

varying, during the step of elongating, said measuring point according to the measured geometrical parameter.

40. (New) An apparatus for elongating an optical fiber preform, comprising:
- a monitoring device for obtaining information on geometrical parameters of the preform being elongated, said monitoring device comprising an image capturing device for obtaining a profile of at least a portion of a softened region of the preform, and a processing device for analyzing the profile for extracting information on the preform geometrical parameters; and
 - a control device for controlling elongation process parameters using the preform geometrical parameters information.